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**ON QUERCUS DURANDII** Buckley.

BY CHARLES MOHR.

The rediscovery of this fine tree in Alabama adds now definitely another one to the number of oaks known to inhabit the forests east of the Mississippi River. First discovered by Prof. Buckley in 1841 in Wilcox County, Alabama, it was described from specimens collected near Austin, Texas, twenty years afterwards. I had occasion to study the tree in several localities in its western home during my investigations of the forest growth of south-western Texas, in December, 1880; subsequently I directed my attention to its rediscovery in the eastern Gulf region, and particularly in Alabama. After a fruitless search through three seasons, I was finally rewarded at the close of the one just passed, in finding this oak in the woods covering the limestone ridges bordering the Little Cahabe River in Bibb County, Alabama.

The largest of the trees observed measured 2 feet in diameter by an estimated height of about 70 feet. The trunk divides at a height from 30 to 35 feet above the ground; the heavy primary limbs are erect, tall, and the head of the tree is of an oblong shape; it resembles in the habit of growth greatly the white oak; the bark is close, more so than in the Texan tree, where it is found inclined to be somewhat flaky, of a bright, almost pure white color, by which it is at once distinguished from the latter. There is scarcely a tree which shows greater variation in the size and shape of its leaves, which were at the date of its rediscovery, 11th November, for the greatest part shed. Only on some late, vigorous shoots, was the foliage yet fresh and green found to persist. The leaves are short petioled, from 2 to  $3\frac{1}{2}$  inches in length, and from  $\frac{1}{2}$  to  $2\frac{1}{2}$  inches at their greatest width, always attenuated at the base. They are either roundish, ovate or obovate towards the apex, largely dilated, irregularly and obtusely, more or less deeply three-lobed, or narrowed to lanceolate with shallow, distant lobes, a mere wavy or entire margin. Of a firm texture, the leaves are pubescent along the veins beneath when older, with a fine, close, pale tomentum.

The fruit is of annual maturation and (at least during this season) produced in abundance, short peduncled to sessile, single, in pairs or in clusters of three and four; small, from three-eighths

to five-eighths of an inch long. The nut is perfectly smooth, shining, of a light tan-color, ovate, somewhat narrowed towards the base, with the apex slightly compressed and umbonate to about one-third of its length, immersed in a shallow cup with closely appressed, slight, knobby and smoothish scales. The nut is sweet and regarded as the best of mast. The acorns seem to germinate in situations more or less exposed to light; the large trees are in more open situations found surrounded by their numerous offspring in all stages of growth.

From the limited knowledge we possess, but little can be said of the distribution of this oak. So far as known, it is confined to a calcareous soil, be it on the rocky uplands or in the bottom lands, the soil of which in western Texas consists of a fine calcareous silt. It seems not to occur west of the basin of the Colorado River; it was not found near New Braunfels or around San Antonio; on the dry, rocky hills near Austin, it scarcely reaches the dimensions of a middle-sized tree; in the rich bottom of the lower Guadeloupe it attains the proportion of the larger trees of the forest; there a number of trees were measured and found from 2 to fully 3 feet in diameter. One felled to the ground measured 37 inches through and 86 feet in length, being perfectly sound. In such localities most favorable to its development, it is esteemed as the most valuable of the timber trees; in its quality equal to the best of white oak timber, it enters into all the manifold uses to which the latter is applied, and which render the white oak of such great importance.

As far as known, the tree has not been found in eastern Texas, Louisiana, Mississippi, and the northern part of Alabama. In the latter State it seems in its northern extension confined to the southern edge of the silurian limestone formation at the 33° of latitude, at an elevation not exceeding 250 or 300 feet above the Gulf of Mexico. In reply to several inquiries made since, in regard to its occurrence in the central and lower part of the State, where the tree is called "Bastard Oak," it has become evident that it is not rare southward throughout the cretaceous belt on the rocky banks lining the water courses, to the tertiary limestone hills below. Its absence in the extensive territory between the latter and the calcareous hills on the Colorado River, nearly 700 miles to the westward, can be accounted for by the prevailing sandy or argillaceous soils quite destitute of lime, whose presence seems to be a necessary requirement for its growth.